REMARKS

Claims 1, 3-16, 18-36, 41, 42 and 47 are pending and are currently rejected. Claims 1, 3, 6, 10-13, 16, 18, 21-24, and 36-40 are rejected under 35 U.S.C. '103(a) over Karabinis (U.S. Patent No. 5,937,332), Varieras (European Patent No. 0559557) and Kawano et al. (U.S. Patent No. 4,972,346). Claims 4-5, 7-9, 14-15, 19-20, 25, and 31-35 are rejected under '103(a) over Karabinis/Varieras/Kawano as further modified by Karabinis et al. (U.S. Patent No. 6,134,437). Claims 36, 41, 42, and 47 are rejected under '103(a) over Karabinis '332/Kawano/Karabinis '437.

This Office Action follows up a telephone interview with the Examiner regarding proposed amendments to claims 1 and 16. Those proposed claims have been incorporated into claims 1 and 16, along with other independent claims in the case. The Applicants would like to thank the Examiner for his review of those proposed claims and for the telephone interview.

SECTION 103 REJECTIONS

As noted above, the Applicants proposed claim amendments and faxed them to the Examiner for discussion. In those amendments, the Applicants focus the claims upon GPS and satellite repeater systems, which incorporate a primary repeater, which receives the GPS or satellite signal, converts that GPS or satellite signal to an RF signal, and then rebroadcasts the RF signal to a secondary repeater in a building. At the secondary repeater, the signal is downconverted and amplified at IF, and then upconverted to a second GPS or satellite signal, which is then broadcast to be transceived with GPS equipment inside of the structure. That is, two separate repeaters are involved. The RF signal passing between the primary repeater and the

secondary repeater could be any suitable RF signal, including an unlicensed frequency, or a GPS frequency signal.

SECTION 103(a) REJECTIONS OVER A COMBINATION OF KARABINIS '332/ VARIERAS/KAWANO

Of the rejected claim set, claims 1 and 16 are independent claims. Claim 1 has been amended, as has claim 16. Claims 10-11, 13, 23-24, and 26-30 are canceled.

In the rejection, the Examiner relies significantly upon the Karabinis '332 reference. That reference discloses a satellite repeater, but specifically, discloses a single wired repeater, wherein a link antenna receives the signal, the signal is filtered and amplified, and then is split to various wired signal paths, to be retransmitted. The single repeater of Karabinis '332 has a link antenna 210 and a broadcast antenna 220, but is only a single repeater. The Varieras reference is relied upon for downconverting of a GPS signal, although such downconversion is somewhat general and occurs between a satellite and a ground station. Finally, the Kawano reference is merely relied upon for teaching downconverting a signal to IF and amplifying or filtering the IF signal, and then upconverting the signal back to an RF signal.

The Examiner makes the argument that it would have been obvious to modify the Karabinis '332 reference to yield the present invention. However, as noted above, claims 1 and 16 have been amended to recite a method comprising receiving the GPS signal with a link antenna and a primary repeater, and downconverting the GPS signal to an IF signal where it is amplified, filtered, and upconverted to produce an RF signal. The primary repeater then uses a broadcast antenna to wirelessly transceive the RF signal with a secondary repeater. At the secondary repeater, the RF signal is downconverted to a

second intermediate frequency, amplified and filtered, and upconverted to a second GPS signal. The secondary repeater, with a broadcast antenna, then transceives the second GPS signal with GPS signal inside a structure.

Even if all three of the cited references were properly combined, the combination still would not teach the present invention. The Karabinis main reference relies upon a single repeater having a wired connection throughout the structure between the two antennae of the single repeater, as illustrated in Figures 3 and 5A, and acts simply as a typical repeater. Any satellite signals in the downlink in the Karabinis reference are simply filtered and amplified, and then split and retransmitted directly to equipment in the building. There is no teaching of a primary repeater that corresponds with a secondary repeater wherein the RF signal is generated by downconverting the original GPS signal to IF, amplifying or filtering the IF signal, and then upconverting the IF signal to produce an RF signal. Furthermore, there is no teaching of a secondary repeater which takes the RF signal, and through downconversion to IF, amplification, filtering and upconversion, generates a second GPS signal that is transceived with the broadcast antenna to GPS equipment within the structure. As such, the Applicants submit that even if the references were properly combined, the three-reference combination still would not teach a person of ordinary skill in the art to make the invention as recited in independent claims 1 and 16. As such, those claims are not rendered obvious under '103(a) over the cited combination of references. Therefore, claims 1 and 16 are allowable over the cited art.

Dependent claims 3, 6, and 12 each depend from claim 1 and would be allowable for that reason. Furthermore, each of those dependent claims recites a unique combination of method steps that are not rendered obvious by the cited combination of references. Dependent claims 18 and 21-22 depend from allowable claim 16 and would be

allowable for that reason, as well. Furthermore, each of those dependent claims recites a unique combination of method steps that are not rendered obvious by the cited combination of references. Therefore, those dependent claims are allowable over the cited art, as well.

SECTION 103(a) REJECTIONS OVER A COMBINATION OF KARABINIS '332 VARIERAS/KAWANO/KARABINIS '437

Claims 4-5, 7-9, 14-15, 19-20, 25 and 31-35 are rejected over a four-reference combination. Claims 5, 7-9, 20, and 25 have been canceled. Claims 14 and 31 are independent claims.

Claim 4 depends from claim 1 and, thus, would be allowable for the reasons as noted above.

The Karabinis '437 reference is added to make a four-reference combination that the Examiner argues renders obvious the invention of the noted claims. The Karabinis '437 reference is cited merely for teaching an unlicensed frequency and provides no specific teaching as recited in the invention of claim 1 of using a primary repeater linked wirelessly to a secondary repeater with an RF signal formed by specific conversion of a GPS signal. Nor does it teach conversion at a secondary repeater back to a GPS signal for transceiving with GPS equipment inside the structure. As such, claim 4 recites a unique combination of elements not rendered obvious by the four-reference combination cited by the Examiner.

Claim 14 is an independent claim that has been amended to further recite a primary repeater and a secondary repeater. The primary repeater downconverts a GPS signal to IF, amplifies the IF, and then upconverts the IF to an unlicensed frequency

signal. The primary repeater then wirelessly retransmits the unlicensed frequency to a secondary repeater wherein the unlicensed frequency signal is downconverted to another IF signal, amplified, and then upconverted to a second GPS signal and retransmitted inside the structure with an antenna coupled to a secondary repeater. For the same reasons as noted above, this three-reference combination of the Karabinis '332/Varieras/Kawano references does not render such an invention obvious. In fact, this three-reference combination does not even teach all the elements recited in claim 14. Furthermore, the Karabinis '437 reference is merely relied upon to pull in the element of an unlicensed frequency. Even if all the references were combined, they would not render obvious the invention as recited in claim 14 because all together the four references do not teach the claimed invention. Therefore, claim 14 is allowable over the cited art.

Claim 31 recites a GPS repeater system with similar limitations as that recited in method claim 14. Thus, claim 31 is also allowable over the four-referenced combination for the same reasons as noted above with respect to claim 14. Again, the Examiner argues that the Karabinis '332 reference teaches retransmitting the unlicensed frequency signal between a primary repeater and a secondary repeater. The Examiner cites to Figure 5A and reference numeral 210 as a primary repeater and reference numeral 220 as a secondary repeater. However, this is technically a wrong interpretation of that piece of prior art. Rather, referring to Figure 3 in Karabinis '332, and in particular column 7, lines 20-38 of the application, the objects of reference numeral 210 and 220 are not repeaters, but merely are antenna assemblies of a single repeater. Therefore, the device shown in Figures 3 and 5A of the Karabinis '332 reference is merely a single repeater. It is clear to a person of ordinary skill in the art

that the Karabinis '332 reference only teaches a single repeater that has two antenna elements. Accordingly, the Applicants submit that the four-reference combination of Karabinis '332/Varieras/Kawano/Karabinis '437 does not render obvious the invention as recited in claims 14 or 31. As such, those claims are allowable.

Claim 15 depends from claim 14 and further recites a unique method not taught by the cited art. Therefore, claim 15 is also allowable over the cited art.

Claim 19 depends from claim 16 and further recites a unique method not taught by the cited art. Therefore, claim 16 is also allowable over the cited art.

Finally, claims 32-35 depend from claim 31 and would be allowable for that reason alone. Furthermore, those claims recite unique methods not taught by the cited art. Therefore, claims 32-35 are also allowable over the cited art.

SECTION 103(a) REJECTIONS OVER A COMBINATION OF KARABINIS '332/ KAWANO/KARABINIS '437

Of the claims 36, 41-42, and 47 rejected over this combination of references, claims 36 and 42 are independent. Claim 36 recites a method of retransmitting a satellite signal including downconverting the satellite signal at a primary repeater to an IF signal, amplifying and filtering the IF signal, and converting the IF signal to an unlicensed frequency signal. The unlicensed frequency signal is then wirelessly retransmitted inside the structure where it is received by a secondary repeater that downconverts the signal to IF, amplifies the IF signal, and then upconverts the IF signal to produce a second satellite signal to be wirelessly transmitted inside the structure. The Karabinis '332 reference teaches a single repeater. There is no teaching of a primary repeater that communicates with a secondary repeater inside a building using an unlicensed frequency signal. The Karabinis '437 reference is merely referred to for teaching an unlicensed frequency. Therefore, the combination of those three references clearly does not teach the method as recited in claim 36 or the repeater system of claim 42 utilizing a primary and a secondary repeater. As shown in Figure 2 of the present invention, the claimed repeater system and method recited in independent claims 36 and 42 would require four antenna systems; two for the primary repeater system, and two for the secondary repeater. Accordingly, for the various reasons discussed above, the three-reference combination of Karabinis '332/Kawano/Karabinis '437 does not render obvious the invention as recited in independent claims 36 and 42. Therefore, claims 36 and 42 are allowable. Dependent claim 41 depends from allowable claim 36 and thus would be allowable for that reason. Furthermore, this claim recites a unique method not taught by the cited art. Therefore,

claim 41 is also allowable over the cited art. Similarly, claim 47 depends from allowable claim 42 and thus would be allowable for that reason. Furthermore, this claim recites a unique method not taught by the cited art. Therefore, claim 47 is also allowable over the cited art.

CONCLUSION

Applicants submit that the currently pending claims are in an allowable form and, therefore, requests a Notice of Allowability of the application at the Examiner's earliest convenience. If any issues remain in the case which might be handled in an expedited fashion, such as through a telephone call or an Examiner's Amendment, the Examiner is certainly encouraged to telephone the Applicants' representative or to issue an Examiner's Amendment.

Applicants enclose a check for $790.00 for filing of the Request for Continued Examination (RCE) submitted herein. The Applicants also enclose a check for $120.00 for a one-month extension of time to file a Response herein. The Applicants know of no other fees due herein with this submission. However, if any additional charges or any credits are necessary, please apply them to Deposit Account 23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

Kurt A. Summe
Reg. No. 36,023

2700 Carew Tower
Cincinnati, OH 45202
(513) 241-2324 (voice)
(513) 421-7269 (facsimile)